BOARD OF TRUSTEES’ RESEARCH AND ECONOMIC DEVELOPMENT COMMITTEE AGENDA AND MATERIALS

May 10, 2023
1:00 – 3:00 p.m.
Research Presentations

Social Science Research Presentations

a. Lindsay Gillikin  Advisor: Dr. Kyle De Young
   “Minority Stress and Binge Eating”

b. Charles Koenig  Advisor: Dr. Todd Surovell
   “Earth Oven Experiments for Agave Lechuguilla”

c. McKenna Litynski  Advisor: Dr. Todd Surovell
   “Microfauna Analysis at the La Prele Mammoth Site: Implications for Clovis Diets and Paleoenvironments”

d. Connor Magnuson  Advisor: Dr. Linda Thunstrom
   “Experimental Economic and Understanding the Gender Wage Gap”

e. Sam Spoor  Advisor: Dr. Kyle De Young
   “Constructing a Biopsychosocial Theory of Food Insecurity and Eating Disorders.”

Regular Meeting:

1. RED Division updates.  Parag Chitnis, Steve Farkas
   Bryant Smalley
AGENDA ITEM TITLE: Presentation – Social Science Research Presentations – Parag Chitnis

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☐ Yes
☒ No

FOR FULL BOARD CONSIDERATION:
☐ Yes [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
☒ No

☒ Attachments/materials are provided in advance of the meeting.

EXECUTIVE SUMMARY:
In every in-person meeting of the Research and Economic Development Committee of the UW Board of Trustees, research presentations in certain areas of UW’s research enterprise are included. For May’s meeting a variety of Social Science student researchers have been invited to present their current and planned research. Summaries of presentations are attached.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:
N/A

WHY THIS ITEM IS BEFORE THE COMMITTEE:
Informational

ACTION REQUIRED AT THIS COMMITTEE MEETING:
N/A

PROPOSED MOTION:
N/A
a. **Lindsay Gillikin**  
   Advisor: Dr. Kyle De Young  
   “Minority Stress and Binge Eating”

Lindsay’s program of research examines: 1) Why are sexual and gender minority (SGM) populations at increased risk for eating disorders? 2) What are the risk/protective factors for eating disorders among SGM individuals? 3) What are the biological underpinnings of minority stress? Lindsay will describe her previous research examining whether emotion regulation explains increased eating disorder risk among SGM individuals. Finally, she will summarize her plans for future research, including 1) an online study testing whether emotion regulation protects against binge eating among SGM individuals, and 2) an experimental study testing whether minority stress leads to increased biological stress responses and subsequent food consumption.

b. **Charles Koenig**  
   Advisor: Dr. Todd Surovell  
   “Earth Oven Experiments for *Agave Lechuguilla*”

Earth ovens are semi-subterranean cooking features used by Indigenous peoples across the world to cook plants and animals. In the Lower Pecos Canyonlands of southwest Texas, Indigenous peoples used earth ovens to cook a variety of plant foods, but one plant that was frequently cooked was *Agave lechuguilla*. To gain a better understanding of the role of earth ovens and *lechuguilla* within Indigenous lifeways, a series of experimental ovens were constructed to determine how oven cooks may have minimized construction costs and maximized the number of cooked *lechuguilla*. This presentation describes the results of the experimental earth oven research.

c. **McKenna Litynski**  
   Advisor: Dr. Todd Surovell  
   “Microfauna Analysis at the La Prele Mammoth Site: Implications for Clovis Diets and Paleoenvironments”

Researchers have traditionally associated Clovis tradition technology with a specialization in large game, but ongoing debates concern the significance of a variety of prey, including microfauna, in Clovis diets. This master’s thesis advances current understandings of the Clovis tradition through analyzing the microfauna collections at the La Prele Mammoth site (48CO1401). Traditional zooarchaeological techniques provide the opportunity to analyze taxa, skeletal element representation, burning distributions, and spatial density analyses based on distances away from hearth features. Zooarchaeology by Mass Spectrometry (ZooMS) illuminates the potential of identifying microfauna taxa from fragmentary bone sites like La Prele. Furthermore, microfauna analysis reconstructs paleoenvironments approximately 12,900 years ago at La Prele.
d. **Connor Magnuson**  
Advisor: Dr. Linda Thunstrom  
“Experimental Economics and Understanding the Gender Wage Gap”

In this presentation today, two studies will be presented: (1) Role and the Gender Wage Gap and (2) Uncertain Levels of Competition. The first study examines whether the observed gender differences in negotiation returns might be explained by women responding differently to roles (employer versus employee) in the labor market. This study found that female subjects assigned the employee role negotiated lower outcomes and responded to role framing and entitlement by changing their assertiveness and reported risk preferences. The second study examines how uncertainty about the level of competition a job applicant faces changes behavior. This study finds that subjects facing uncertainty accept lower offers than those who know the level of competition they face.

e. **Sam Spoor**  
Advisor: Dr. Kyle De Young  
“Constructing a Biopsychosocial Theory of Food Insecurity and Eating Disorders”

a. The focus of this talk is on my research program studying eating disorder pathology in the context of food insecurity, as well as how my proposed NSF study fits into the scope of this work. The NSF is specifically focused on (1) explaining the relation between food insecurity and executive dysfunction among college students, and (2) identifying dynamic within and between-day associations between food insecurity, executive functions, and chronobiological factors such as sleep and eating pattern.
Minority Stress and Binge Eating

Lindsay Gillikin, B.A.
Clinical Psychology PhD Student
Advisor: Kyle P. De Young, Ph.D., FAED
Professional Background

Undergraduate Degree
• Psychology (B.A.)
• Women's, Gender & Sexuality Studies (B.A.)

Clinical Psychology PhD student
• Eating Behaviors Lab
• Advisor: Dr. Kyle De Young

Research Coordinator
• Binge-eating treatment trials for adults and adolescents
• Ecological momentary assessment studies
Sexual and Gender Minority (SGM) Individuals

Individuals who do not identify as cisgender and/or heterosexual

This includes individuals who identify as:

- Gay
- Lesbian
- Bisexual
- Nonbinary
- Transgender
- Asexual

- (And many others)
Sexual and gender minority (SGM) individuals experience higher rates of mental health problems:

- Suicidality
- Non-suicidal self injury
- Depression
- Anxiety
- Substance use
- Eating disorders

Physical health problems:

- Cardiovascular disease
- Arthritis
- Inflammation

Diamond et al., 2021; Fredriksen-Goldsen et al., 2017, Lipsen et al., 2019; Kamody et al., 2020; Marchi et al., 2022; Nagata et al., 2020; Noel et al., 2023; Pharr et al., 2019
### SGM Individuals Experience Higher Rates of Eating Disorders

#### Eating Disorders Behaviors:
- Binge eating
- Weight control behaviors
  - Self-induced vomiting
  - Overexercising
  - Appearance and Performance-Enhancing Drug Use

#### Eating Disorder Diagnoses:
- Binge-Eating Disorder
- Bulimia Nervosa
- Anorexia Nervosa
- Other Specified Eating and Feeding Disorder

*Kamody et al., 2020; Nagata et al., 2020*
My Line of Research:

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?
Binge Eating

Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat in a similar period of time under similar circumstances.

The sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).

"Couldn't stop eating"

"Like a ball rolling down a hill"

"Felt out of control"

"Compelled to keep eating"

American Psychiatric Association, 2022
Here's what we'll cover:

**Stressor**

Low grade on an exam

**Negative Emotions**

Shame, anxiety, worry

**Binge Eating**

Overeating + Feeling out of control

"What if I don't pass the class?"

"Food will make me feel better"

“I’m a failure”

"I deserve this"
Stressor

Minority Stress

Stressor

Emotion Regulation

Social Support

Mental Health Outcomes

Stressor

Minority Stress

Emotion Regulation

Negative Emotions

Binge Eating

Study 1: Undergrad Thesis

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?
Study Design

Participants

N=195 sexual minority adults
N=194 heterosexual adults

Procedures

Online self-report survey at one timepoint

Emotion Regulation Deficits

Sexual Minority Status

Eating Disorder Symptoms

Highlights

• LGB individuals reported higher eating pathology than heterosexual individuals
• LGB individuals reported higher levels of maladaptive emotion regulation compared to heterosexual individuals
• Emotion dysregulation may partially explain the increased risk of eating pathology in LGB individuals

Gillikin et al., 2021
Emotion regulation deficits specific to response to negative emotional experiences partially explained increased ED symptoms among SGM participants.
Emotion regulation deficits specific to identifying and understanding emotional experiences were not related.

Gillikin et al., 2021
Study 2: Master's Thesis

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?

Anticipated Start: Fall 2023
Study Design

Participants

N=172 SGM adults

Procedures

Online self-report survey at one timepoint

Research Questions:

Is proximal minority stress associated with increased binge eating?

Does emotion regulation serve as a protective factor?

Hypotheses:

1.) Proximal minority stress will be associated with binge eating

2.) Emotion regulation will change the strength of the relationship between minority stress and binge eating

Anticipated Start: Fall 2023
Study Design

Procedures
Online self-report survey at one timepoint

Participants
N=172 SGM adults

Research Questions:
Is proximal minority stress associated with increased binge eating?

Does emotion regulation serve as a protective factor?

Hypotheses:
1.) Proximal minority stress will be associated with binge eating

2.) Emotion regulation will change the strength of the relationship between minority stress and binge eating

Anticipated Start: Fall 2023
Study 3: NSF GRFP Project

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?

Anticipated Start: Fall 2023
Aims and Hypotheses

Research Questions:
1. Does minority stress predict heightened acute cortisol response and negative affect?

Hypotheses:
1. Minority stress will predict increased ACR and negative affect.

Anticipated Start: Fall 2023
Aims and Hypotheses

Hypotheses:
1. Minority stress will predict increased ACR and negative affect.
2. Increases in ACR and negative affect following the minority stress induction will predict greater food consumption.

Research Questions:
1. Does minority stress predict heightened acute cortisol response and negative affect?
2. Do these two parallel processes predict increased binge eating?

Anticipated Start: Fall 2023
Saliva samples will measure acute cortisol response - a metric of physiological stress.
Interview task - half of participants will receive a minority stress induction version
Participants will be asked "What do you remember about the interview?"
Thank you!

**Mentors and Collaborators:**

**Kyle DeYoung, PhD, FAED**  
Department of Psychology, University of Wyoming

**Ilana Seager van Dyke, PhD**  
Department of Psychology, Massey University  
Formerly: Ohio State University

**Stephanie Manasse, PhD**  
Center for Weight, Eating & Lifestyle Science  
Department of Psychology, Drexel University
References


Questions?
Earth Oven Experiments for Agave Lechuguilla

Charles W. Koenig
PhD Candidate
University of Wyoming
Research and Economic Development Committee of the Board of Trustees
May 10, 2023
*Laramie

*Lower Pecos Canyonlands
500+ Generations of Hunter-Gatherers
Prickly Pear Fruit
Mesquite Pods
Walnuts
Sotol
Agave lechuguilla
Yucca
Onion
Mature Prickly Pear Pads
Pecans
Earth Ovens
Build the Oven

Fire the Oven

Heating Element

Lower Packing Material

Food

Upper Packing Material

Sediment Cap

Sealed Oven
Uncovering Oven Upper Packing Material Cooked Food Lechuguilla “heart”
AGAVE FESTIVAL MARFA

FOOD • FILM • MUSIC • SCIENCE
SOTOL • TEQUILA • MEZCAL
Understanding the role(s) of earth ovens—both economic and cultural—is paramount for studying LPC foragers. We must understand how they work!
Experimental Archaeology
Phase I: How Much Wood and Rock?

- Determine the minimum amount of wood required to maintain 100°C heating element for 36 hours.

- Three ovens with differing amounts of rock
  - 100 kg ($n=4$)
  - 175 kg ($n=3$)
  - 250 kg ($n=3$)

- Vary the amount of wood
  - 30%
  - 50%
  - 70%
  - 90%

- Measure Temperature Change
Regardless of rock mass, minimum ~90-100 kg fuel for 36 hrs of thermal energy
Phase II: How Much Food?

- Determine how much lechuguilla can be cooked with less rock and wood
- Two ovens with differing amounts of rock and wood
  - 175 kg rock & 125 kg wood
  - 250 kg rock & 133 kg wood
- Differing number of plants
  - 30 plants (175 kg oven)
  - 62 plants (250 kg oven)
• Smaller oven successfully cooked 30 lechuguilla
• Larger feature could have cooked more than 62 (double??)
Importance of Earth Oven Experiments

• Evaluating oven variability can expand our understanding of Indigenous economies

• Earth Ovens are communal features

• Importance of traditional knowledge
Thank You!

- Missy Harrington
- Frison Institute, University of Wyoming
- Thomas E. Miller Research Endowment, Texas State University
- University of Wyoming Department of Anthropology
- University of Wyoming Arts and Sciences Paul Stock Foundation Travel Fund
- University of Wyoming Ellbogen Outstanding Graduate Assistant Teaching Award
- UW Graduate Student Community
- PhD Committee
- Many other colleagues, collaborators, friends, and family!!
Experimental Economics and Understanding the Gender Wage Gap

Connor Magnuson

April 24, 2023
Quick Note

I could not have completed any research without

- Advisors
- Fellow Graduate Students
- Generous Donations
  - Lowham RA Fellowship
  - Shelby Gerking Graduate Award in Economics
  - Bugas Research Award
  - Charles Mason Graduate Research Award
Research Agenda

Applying a range of experimental tools to answer relevant questions that are focused on gender differences in wage outcomes.
Problem: Women in Wyoming make $0.75 for every dollar earned by men [Alexander and Jones-Ritten, 2023]

- loss of $1.5 billion loss to the Wyoming Economy
Specific Problem Examined

Men receive higher returns to negotiation than women \cite{Card et al., 2015, Jones Ritten et al., 2020} driving $\approx 30\%$ of the wage gap \cite{Säve-Söderbergh, 2019, Sin et al., 2022}. 
Research Question

Can the gender differences in bargaining returns outcomes for men and women be explained by women responding differently to roles in the labor market?
Employee/Employer Bargaining game

Alternating offer game with assigned roles attempting to split a pot of money. Intended to be run on campus, but Covid-19
Experimental Procedure

1. Assigned a Role
   - No difference in information
   - “employers will split the earnings with the employee”

2. Negotiation Period

3. Complete Survey
Key Outcome

What share did I negotiate?
Subject Recruitment

93 men and 99 women: half from WYSAC half from Teton Lab
Key Result

1. Men and Women Respond Differently to Their Assigned Roles
## Data

<table>
<thead>
<tr>
<th>Group</th>
<th>Agreement Amount</th>
<th>Number of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Employee</td>
<td>51.108 (9.429)</td>
<td>359</td>
</tr>
<tr>
<td>Male Employer</td>
<td>50.885 (9.676)</td>
<td>463</td>
</tr>
<tr>
<td>Female Employee</td>
<td>47.765 (10.306)</td>
<td>512</td>
</tr>
<tr>
<td>Female Employer</td>
<td>50.789 (10.757)</td>
<td>410</td>
</tr>
</tbody>
</table>

**Table:** Summary of Outcome Variables
Key Result Driver

- Female employees are more risk averse than female employers.
- No difference between roles in risk preferences for men.
Potential Explanation

- Women are more responsive to social cues than men [Ellingsen et al., 2013, Lotz, 2014, Espinosa and Kovářík, 2015]
- Employees have less bargaining power [Krueger, 2018, Mishel, 2020, Cauvel and Pacitti, 2022]
Takeaway Lessons

1. Gender Gap for Employees, But Not for Employers
2. Result Driven by Role Responsiveness of Women
Posted-Offer Employment System

What if you can’t negotiate your salary?
What if you are offered less than you asked?
In a posted-offer employment system, any gender differences is not motivated by negotiation returns, but could be response to uncertainty.
Chosen Experimental Tool

The ultimatum game

- Proposer (Employer) proposes a split of $10
- Respondent (Employee) accepts or declines
Experimental Treatment

1. Certainty: 1 responder
2. Competition: 3 responder
3. Uncertain Competition: 50% 3 responders, 50% 1 responder
Outcome Variable

1. Acceptance Rate
2. Average Offer
Subject Recruitment

Qualtrics: 287 proposers and 642 responders
Key Results

1. No Change in Average Offer
2. Uncertain Competition lead to the Most Accepted Offers
Key Result Driver

Respondents facing uncertainty

- Accept unfair offers (less than $5)
- Must Earn Money
Extensions of Current Papers

Continue to add realism to experimental realm

- Role and the Gender Wage Gap
  - Empower Employees
  - Vary Roles
- Uncertain Levels of Competition
  - Allow for Interview
  - Respondent Competition
Borrow from Dr. John List’s playbook and take it to the field.
Thank You!

Any Questions?


References III


### Key Regressions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee1</td>
<td>0.459</td>
<td>-3.311***</td>
</tr>
<tr>
<td></td>
<td>(1.148)</td>
<td>(1.253)</td>
</tr>
<tr>
<td>Constant</td>
<td>50.857***</td>
<td>51.14***</td>
</tr>
<tr>
<td></td>
<td>(0.754)</td>
<td>(0.935)</td>
</tr>
<tr>
<td>Observations</td>
<td>777</td>
<td>877</td>
</tr>
<tr>
<td>Number of Individuals</td>
<td>89</td>
<td>96</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

**Table:** Within Gender Role Difference Regressions
### Key Driver Support

<table>
<thead>
<tr>
<th>Group</th>
<th>Risk Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Employee</td>
<td>4.535 (1.438)</td>
</tr>
<tr>
<td>Male Employer</td>
<td>4.532 (1.622)</td>
</tr>
<tr>
<td>Female Employee</td>
<td>4.007 (1.733)</td>
</tr>
<tr>
<td>Female Employer</td>
<td>4.856 (1.436)** *</td>
</tr>
</tbody>
</table>

Standard Deviations in parentheses

*** p<0.01, ** p<0.05, * p<0.1

**Table:** Risk Aversion
MICROFAUNA ANALYSIS AT THE LA PRELE MAMMOTH SITE (48CO1401): IMPLICATIONS FOR CLOVIS DIET AND PALEOENVIRONMENTS

McKenna Litynski
SAA Annual Meeting
University of Wyoming, Department of Anthropology
March 31st, 2023
La Prele Mammoth Site

Clovis tradition: A distinctive fluted projectile point technology that spanned approximately 13,050-12,750 BP.
La Prele Mammoth Site
Primary research goals:

Traditional zooarchaeological techniques provide the opportunity to test whether the microfauna are naturally or culturally associated.

This thesis showcases the potential of proteomics-based methods like Zooarchaeology by Mass Spectrometry (ZooMS) to aid in identifying microfauna taxa at Clovis sites like La Prele.

Analysis of the molars of rodents allow for species level identifications and therefore determining areas of sympatry for certain taxa and drawing inferences about the past environment at La Prele.
Clovis Generalist
Versus Specialist
Debate
The debate cannot be fully understood without also considering small animals in Clovis contexts.
If Clovis subsistence economy at the La Prele Mammoth site included microfauna, or animals the size of a hare or smaller, then both Pleistocene megafauna and microfauna should exhibit strong undeniable evidence for an association with human activity.
Zooarchaeological Analysis Methods:

Traditional analysis includes recording NISP, provenience information, skeletal element representation, burning or calcination (including a burning scale), bone condition, and identification of specimens to the lowest taxonomic level possible based on osteological characteristics.
Spatial Density Analysis
Traditional Zooarchaeology Expectations

Site Spatial Analysis

- Cultural Hearth Area: Cultural Association
- Site Periphery: Cultural Association

Microfauna densities

Distance from hearth in meters

Natural predicted pattern
Cultural predicted pattern
Traditional Zooarchaeology Results

Microfauna Taxa Percent Abundances

- Non-cultural
- Cultural
There is a significant difference ($X^2=10.59$, df=2, $p=0.014$) between the taxa represented in cultural versus non-cultural elevations including the following categories:

- fish/birds
- carnivores (mustelids)
- shrews/moles
- rodents

There are more shrews/moles and rodents than expected at the cultural level and fewer fish/birds and carnivores than expected at the non-cultural elevations.
Traditional Zooarchaeology Results

*All indeterminate taxa were excluded from the spatial density analysis.*
Traditional Zooarchaeology Results

Block D microfauna across all elevations

Block B microfauna across all elevations

*All indeterminate taxa were excluded from the spatial density analysis.
Traditional Zooarchaeology Results

*All indeterminate taxa were excluded from the spatial density analysis.

Densities of microfauna from Block D below the cultural level could not be determined considering the very small sample size of bones.
Major Findings

• Spatial analyses based on densities in relation to distance away from hearth features at the cultural level deviate from the randomized model to a lesser extent compared with the non-cultural elevations. This implies a natural rather than cultural microfauna association during site occupation.

• There is a statistically significant difference between the taxa represented at the cultural level compared with the non-cultural elevations.

• Considering clustering of calcined microfauna bone is not present, it is more likely that the burned microfauna bone that exists at La Prele reflects a natural rather than cultural signature.

In summary:

Based on the representation of taxa, distribution of burned microfauna, and the ring and sector analysis of microfauna densities from hearth features, the signature indicates a... NATURAL rather than cultural association.
Conclusion
Acknowledgements

Todd Surovell, for believing in me every step of the way and being my mentor, advisor, and R studio/Excel wizard.

Bree Doering, for encouraging me to observe my faunal data from new angles.

Franco Basile, for providing me with the opportunity to use the MALDI-TOF and allowing my research to soar to new and unexpected heights.

Danny Walker, who helped me analyze the rodent molars for this thesis and encouraged me to pursue paleoenvironmental reconstructions at La Prele.

The Frison Institute, for being willing to fund the ZooMS portion of this thesis.

Sarah Allaun and Sebastian Wetherbee, for their help and support in making the ZooMS portion of this thesis a possibility.

All the special people that made my journey as a master’s student that much brighter!
Questions?

Email: mlitynsk@uwyo.edu
Constructing a Biopsychosocial Theory of Food Insecurity and Eating Disorders

Samantha Spoor, B.S.

Advisor: Kyle De Young, Ph.D.
Overview

• Research Program
• National Science Foundation Project
What are the impacts of **structural** and **social** determinants of health on eating disorder pathology?

- Food Insecurity
- Social Identity

What **biopsychosocial** factors explain the relations between health disparities and eating pathology?

- Chronobiology
- Cognitive functions
- Sociocultural context

Research Program
Eating Disorder Pathology

*Cognitive & behavioral* features of eating disorders
Eating Disorder Pathology

Cognitions
- Intentions
- Distortions
- Distress

Behaviors
- Restriction
- Binge Eating
- Purging
• What are the impacts of *structural* and *social* determinants of health on eating disorder pathology?
  • Food Insecurity
  • Social Identity

• What *biopsychosocial* factors explain the relations between health disparities and eating pathology?
  • Chronobiology
  • Cognitive Functions
  • Sociocultural context
Imagine what someone with an eating disorder “looks like”
Eating disorder stereotype

- Thin
- White
- Affluent
- Young
- Woman
Consequences of Narrow Focus on “Who”

• Causes us to overlook environmental stressors

→ *When are people at risk?*

• Limits our understanding of vulnerability for eating disorders

→ *Why are they at risk?*
What are the impacts of structural and social determinants of health on eating disorder pathology?

- Food Insecurity
- Social Identity

What biopsychosocial factors explain the relations between health disparities and eating pathology?

- Chronobiology
- Cognitive Function
- Sociocultural context
Food Insecurity

Lacking *consistent* access to sufficient food necessary to live a healthy life\(^1\)

\(^1\)Coleman-Jensen et al. (2019). U.S. Dept Agriculture.
~20% of college students in the U.S. are food insecure

Food insecurity is associated with:
- Eating disorder pathology
- Depression, anxiety, stress
- Cognitive dysfunction

What are the impacts of *structural* and *social* determinants of health on eating disorder pathology?
- Food Insecurity
- Social Identity

What *biopsychosocial* factors explain the relations between health disparities and eating pathology?
- Chronobiology
- Cognitive Function
- Social context
**Chronobiology**

Within (homeostatic) and between-day (circadian) rhythms:

(1) sleep
(2) eating pattern
Chronobiology: Eating Behaviors & Cognitive Functions

Circadian dysregulation associated with:
- Delayed within-day eating & evening overconsumption\(^6\)
- Executive Function (EF) deficits\(^5\)
  - Working memory
  - Cognitive inhibition
  - Cognitive flexibility

\(^5\)Royer et al., 2020. \(^6\)De Young et al., 2022
Executive Functions

cognitive skills necessary for goal-directed activity and problem-solving
Testing a Chronobiological Model of College Student Food Insecurity and Executive Function

National Science Foundation Graduate Research Fellowship (NSF GRFP)
College Environment

- High cognitive burden
- Disrupted chronobiological rhythms
  - sleep
  - social activities
  - eating
Study Aims

Aim 1
• Test if chronobiological disruption explains the association between food insecurity and executive dysfunction among undergraduates

Aim 2
• Examine bidirectional within- and between-day associations between food insecurity, sleep, eating, and executive functions among undergraduates with food insecurity
Continuous performance task (CPT): Executive functions

Survey: Food insecurity, eating pattern, sleep
Study Aims

Aim 1
• Test if chronobiological disruption explains the association between food insecurity and executive dysfunction among undergraduates

Aim 2
• Examine bidirectional within- and between-day associations between food insecurity, sleep, eating, and executive functions among undergraduates with food insecurity
Procedure.

AIM 1: 10 weeks; N = 650

Time 1 (Screen) → 5 weeks → Time 2 CPT Survey → 5 weeks → Time 3 CPT Survey

AIM 2: 11 weeks; n = 50 (MODERATE TO HIGH FI)

EMA Study Eligibility → Week 1 MORNING CAR DAILY EMA → Week 6 MORNING CAR DAILY EMA → Week 11 MORNING CAR DAILY EMA
Broader Impacts

• **Reduce food insecurity prevalence**
  - Utilization of university food access programs
  - Timing of food access delivery
  - Academic performance & STEM retention
  - Reduce anxiety, depression, stress
  - *Eating disorder prevention?*
Research Program: Future Directions

• What *biopsychosocial* factors explain the relations between health disparities on eating pathology?
  
  • Chronobiology
  • Cognitive functions
  • Sociocultural context
Thank you!

Correspondence: sspoor@uwyo.edu
AGENDA ITEM TITLE: RED Division Updates – Parag Chitnis, Steve Farkas, Bryant Smalley

☑ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☑ Yes
☐ No

FOR FULL BOARD CONSIDERATION:
☐ Yes [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
☑ No

Attachments/materials are provided in advance of the meeting.

EXECUTIVE SUMMARY:
Vice President Parag Chitnis will provide opening remarks and Associate Vice Presidents Steve Farkas and Bryant Smalley will give updates on a variety of topics within the Division of Research and Economic Development.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:

WHY THIS ITEM IS BEFORE THE COMMITTEE: Informational update

ACTION REQUIRED AT THIS COMMITTEE MEETING: N/A

PROPOSED MOTION:
N/A
Economic Development Updates

Board of Trustees
May 11, 2023
Agenda

- WIP Phase 2 – Discussion
- Center for Entrepreneurship and Innovation + College of Business
- Faculty Fellows’ Economic Development Projects
- Technology Transfer Office reset
WIP Phase 2 - Discussion

• Programmatic areas
• Investments
• UW Led
## INITIATIVE SUMMARY

<table>
<thead>
<tr>
<th>INITIATIVE</th>
<th>SUMMARY</th>
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<tbody>
<tr>
<td>1. Entrepreneurship Education &amp; Research Committee</td>
<td>Faculty teaching and research fellowships, on-site workshops</td>
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<tr>
<td>2.A. Enrollment &amp; Engagement Focused Marketing Strategy</td>
<td>Comprehensive strategy to promote enrollment in entrepreneurship programming throughout campus, and participation in associated non-curricular events.</td>
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<td>2.B. Grad Certificate Tuition Scholarships</td>
<td>Tuition scholarships for non-business graduate students to join the new Graduate Certificate in Entrepreneurship &amp; Innovation</td>
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<td>3. Entrepreneur-In-Residence (EIR) Programming</td>
<td>Additional resources to extend wider campus access to the EIRs being brought to Laramie by The Venture MBA</td>
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<td>4. Graduate Business Consulting Practicum</td>
<td>Establish an elective graduate class to house company and community engaged experiential consulting and learning projects.</td>
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<td>5. MBA in Residence Program</td>
<td>Establish graduate assistantships and internships for MBA students to become embedded assets in the BRN and other entrepreneurial entities in Wyoming.</td>
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<td>6. Enhancing Innovation Funding Events: Fisher &amp; Ellbogen</td>
<td>Establish a task force in collaboration with IMPACT 307 to enhance pitch competitions and develop a proposal for a culminating statewide event fed from extant regional events.</td>
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Faculty Fellows Program

• Carbon Monitoring, Verifying, Tracking, and Tokenizing using Blockchain
  • Soheil Saraji – SER

• Establishing strategic Public-Private Partnerships (PPPs) for the development and operation of research park and innovation districts
  • Charlie Zhang – College of Engineering

• Wyoming Wool Initiative Product Investigations
  • Jennifer Harmon - Family and Consumer Sciences

• Corporate Relations Model
  • Ben Cook – College of Business
Tech Transfer Office - Reset

• Departures
  • Office Director
  • Licensing Director

• Transition
  • Andy Applegate - Technology Transfer Manager
  • General Counsel Office
  • Consultant
    • Internal / External Review
    • Best practices
    • Organizational recommendations
  • Outside IP Counsel – Patterson / Sheridan

• Interim Solution (12 months – effective April 17, 2023)
  • “APIOiX – Innovation Transfer : Arundeep Pradhan, President
Discussion
Improving Processes and Procedures to Enhance Research Productivity

University of Wyoming Board of Trustees
Research and Economic Development Committee

May 10, 2023
Goal

• The Research and Economic Development Division (REDD) is committed to supporting the growth and expansion of the research enterprise at the University of Wyoming.
• To ensure our processes and procedures maximally advance that goal, we have formed three new committees that are examining specific topic areas to create faculty-driven recommendations to improve efficiencies, reduce administrative burden, and maximize impact.
New Committees

- **Contracted Services Advisory Committee**
  - Skill- and deliverable-based contracts that are often time-sensitive and limited in scope

- **Faculty Startup Process Advisory Committee**
  - Financial support provided to new faculty to help them establish their research upon joining UW faculty

- **Research Core Facilities Task Force**
  - High-tech resources centralized at the University level to make them available to researchers across campus
Contracted Services

• **Charge**
  - Responsible for reviewing current processes and procedures for submitting and approving contracted services and making recommendations for ways to streamline that process

• **Intent**
  - More efficiently engage with industry and other agencies to engage in contracted services
  - Better support faculty who engage in contracted services work
Contracted Services

• Preliminary Recommendations
  • Refine communication and interaction between REDD and faculty for these time-sensitive proposals
  • Explore opportunities for expedited review and/or automatic approval for certain contracted services proposals (e.g., templates)
  • Improve billing and invoicing procedures to align with rapid pace
  • Expand staff support within REDD designated to support contracted services/contract negotiation
Faculty Startup

• **Charge**
  • Responsible for reviewing current processes and procedures for requesting and expending faculty startup packages and making recommendations for ways to streamline that process

• **Intent**
  • Simplify the process by which units request startup for incoming faculty members (important for offers)
  • Improve procedures for expending startup funds
• **Preliminary Recommendations**
  
  • Expand ways in which startup funds can be spent
  • Eliminate threshold below which REDD will not contribute ($50K)
  • Allow for adjusting startup budgets as researchers identify changing needs
  • Increase the speed of startup approval requests
  • Explore the possibility of setting automatic startup request approval criteria (e.g., below a certain threshold)
Core Facilities

- Recently formed
- **Charge**
  - Responsible for creating a strategic and operations plan that will define the successful growth and administration of REDD’s core facilities to maximize the impact of and access to advanced research instrumentation
- **Intent**
  - Maximizing impact and sustainability of core facilities
  - Developing a strategy for expansion of core facilities
Core Facilities

• **Anticipated Focal Areas**
  • Improving the administrative structure and policies governing REDD’s core facilities
  • Developing a strategy to guide the creation, financial support, and sustainability of REDD’s core facilities (e.g., revenue generation)
  • Creating an approach for collective and efficient operation and management of REDD’s core facilities
Intent and Charge for New REDD Committees

- **Contracted Services Advisory Committee**
  - **Intent:** In addition to traditional investigator-initiated research, REDD encourages and supports engagement in industry-sponsored contract work (e.g., execution of contracted tasks/services that typically follow a standard rate sheet or formula-driven budget). Such work presents opportunities to support industry and other agencies with tasks the University possesses expertise in, while also generating new revenue streams to the University. Such work often requires fast turnaround times and it is important to have streamlined procedures for reviewing and approving such work.
  - **Charge:** The committee will be responsible for reviewing current processes and procedures for submitting and approving contracted services, and making recommendations for ways to streamline that process.

- **Faculty Startup Process Advisory Committee**
  - **Intent:** REDD financially supports faculty startup packages in collaboration with academic Colleges and Schools. As UW continues to progress toward R1 status, creating systems that streamline and simplify the awarding and management of startup funds will be essential in scaling research at the University and in attracting top research talent to the University.
  - **Charge:** The committee will be responsible for reviewing current processes and procedures for requesting and expending faculty startup packages and making recommendations for ways to streamline that process.

- **Research Core Facilities Task Force**
  - **Intent:** Numerous benefits derive from managing research instrumentation in shared core facilities, e.g., in-house spending of external research funding, improved efficiency of sample analysis (lower costs and increased turnaround time), and opportunities for new method development enhancing the research capabilities of UW. The REDD oversees several instrument core facilities operated as research service centers. These facilities currently operate independently but share a common mission and have similar demands for operation, financial accounting, marketing, and compliance.
  - **Charge:** The task force will be responsible for creating a strategic and operations plan that will define the successful growth and administration of REDD’s core facilities to maximize the impact of and access to advanced research instrumentation.